

ALLISON (C.C.)

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NOTES UPON

Injuries of the Head

AND

Tubercular Pelvic Peritonitis.

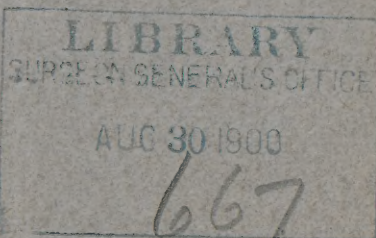
BY

CHARLES C. ALLISON, M.D.

PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY, CREIGHTON  
MEDICAL COLLEGE; SURGEON-IN-CHIEF TO THE  
PRESBYTERIAN HOSPITAL, ETC.

OMAHA, NEB.

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## INJURIES OF THE HEAD.\*

BY CHARLES C. ALLISON, M. D.,

Professor of Principles and Practice of Surgery, Creighton Medical College,  
Surgeon-in-Chief to the Presbyterian Hospital, etc.

OMAHA, NEB.

In our examination of head injuries an essential feature is the estimation of the intracranial lesion. The local cranial wound may be accompanied by a meningeal or a cerebral contusion, or by a laceration of brain tissue at some distance from the external injury, and upon these complications in a great measure depends the prognosis. If fracture exists, its management, whether simple, compound, or complicated, must be determined by the surgical judgment which, with all care against inflammation, relieves by the trephine or elevator the pressure of bone, arrests bleeding, and places the tissues in the best position for uncomplicated repair.

To determine on the plan of treatment, when the injury to bone is slight, and the attending symptoms not urgent, is a delicate question. The rule that every depressed fracture should be elevated; that in a stellate fissure the integrity of the inner table is doubtful, and hence exploration judicious; that in a simple fissure with intracranial symptoms means for inspection are indicated, and that when a marked hematoma masks the bony outlines, exploration will be considered appropriate and conservative, seems to be a correct one, surgically speaking, in our care of these cases. The following case will illustrate an unexpected complication in which the obscure symptoms pointed to the selection of a nonoperative line of treatment.

May L., aged 8 years, was injured in a street railway accident, and an examination at the Presbyterian Hospital, two days after the injury, revealed normal pupils, temperature and pulse, with absence of motor and sensory disturbances. The tone of the muscles and intellection were unimpaired. A large hematoma upon the left side of the head, which entirely prevented palpation of the bone, increased moderately during the first four days, while the other negative symptoms remained unchanged. With the head prepared an incision revealed a fissuration and slight depres-

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sion of the bone under the extracranial clot, and the trephine revealed a large epidural clot amounting to three ounces. Its removal was followed by a recovery which might possibly have ensued without operative interference, yet it is, I think, plain that the danger either of early or late complications was reduced by the treatment which in the face of such negative symptoms was reluctantly practiced.

Of the intracranial lesions which influence the prognosis in head injuries hemorrhage deserves first consideration, and if free, it is generally epidural primarily, although a pial or cortical bleeding may coexist or occur independently of the extradural extravasation. The dangers which attend this intracranial complication depend upon the amount and location of the extravasated blood. Rapid exsanguination, compression, and shock from bleeding, will have, as early symptoms, a subnormal temperature, temporary and probably recurrent unconsciousness, a compressible pulse while the deviations of respiration, and pupils are not as a rule diagnostic. Although an escape of blood or cerebro-spinal fluid from the ear, or of blood from the nose or mouth, or a subconjunctival ecchymosis, after eliminating extracranial causes, directs our attention not only to the bleeding but to a possible fracture, yet the absence of such evidences does not exclude serious internal lesions or fracture. In fact it has been originally pointed out by Phelps that severe localized pain, disproportionate in intensity to the apparent severity of the injury, may be the guide to the diagnosis of a basic fracture.

In cranial fractures it is not a common experience to meet with lay press cases where coma is suddenly relieved by a trephination; yet, if such a case actually occurs the remediable complication will be found to be hemorrhage. A favorable case for such an illustration occurred in 1892, when a man who had received a sever blow over the left side of the head walked some distance, described his accident, and soon passed into an unconscious condition with subnormal temperature and pulse and hemiplegia. Trephination of a depressed fracture revealed a rupture of the anterior branch of the middle meningeal artery, with profuse epidural and cortical extravasations, the removal of which,



with arrest of the bleeding, led to a return of consciousness and motion, with restoration to normal of pulse and respiration, as soon as the effects of the anesthetic were lost.

In attempting isolation of contusion, as one of the prominent intracranial non-operative complications, it is plain that it rarely exists uncomplicated by laceration or hemorrhage. Confusion, vertigo, restlessness, with temporary unconsciousness and a feeling of exhaustion, point to brain contusion without a necessarily grave prognosis, yet the care of such a case should cover a period of several days, with quiet sedatives and laxatives as safeguards against a late secondary development of inflammation.

The indications of laceration of brain tissue are, sharp temperature elevation, which continues progressive until the fatal termination; irritability, sensitiveness, muscular rigidity, especially with basic laceration; asymmetrical radial pulse, generally with greater fullness and strength upon the side of injury. Bilateral variations of axillary temperature are sometimes associated with this unfavorable intracranial lesion.

The treatment in lacerated injuries is necessarily unsatisfactory, yet, as in contusion, the relief from external irritations, sustaining the circulation, and securing rest are to be attempted. To this end the ice cap, mercurials; and morphia or bromides, with a dark, quiet room, are probably the most valuable agents.

In operative cases no interference should be attempted until reaction has been secured, unless from excessive hemorrhage such a course is not warranted. The immediate and depressing effects should pass away, and the shock of a laceration should be combatted by agents which sustain the heart and respiration before the opportunity for the added shock of an operation is permitted. The limitations, therefore, for interference surgically, while broad for vertex fracture and for evidences of epidural hemorrhage, are comparatively narrow for the intracranial complications—deep hemorrhage, contusion, and laceration of brain or meninges. This rule cannot be made descriptively precise, for the reason that a given case may present fractures belonging to each of the leading lesions, when the clinical evidences must be analyzed and the most urgent ones met.

## TUBERCULAR PELVIC PERITONITIS.\*

BY CHARLES C. ALLISON, M. D.

Professor of Principles and Practice of Surgery, Creighton Medical College,  
Surgeon-in-Chief to the Presbyterian Hospital, etc.,

OMAHA, NEB.

It seems to be generally held that the lymphatic system affords the main avenue for tubercular invasion. Thus in children, whose exposed facial integument, with repeated abrasions, invites a tubercular cervical adenolymphangitis, (1) in the adult the nasopharyngeal space, directly exposed to multiple bacterial irritations, favors by this predisposition an entrance into the lymph-channels and, with suitable soil, general dissemination through the larger ducts to be bronchial and mediastinal glands. Through the same system a tubercular invasion may bevelop from the genital lymphatics, with easy access to the histologically allied tissue—the serious peritoneum. These neighboring glands in the process of caseation may directly infect the peritoneum, or a hematogenic deposit in this region of concurrent congestions may follow as a secondary expression of a distant tuberculosis. From the intestinal canal also an ulceration may allow the tubercle bacilli to reach the peritoneum, and thus start the destructive process on this organ.

Reasons are manifest, therefore, for the exposure of the general peritoneum to this disease, while there seems to be a strong analogy between the elective area in children—the cervical and bronchial lymphatics—where the surface of the body offers least resistance, and in the invasion of the pelvic peritoneum, occurring as it usually does in females between the ages of 20 and 40 years, during which time there is most exposure to the lymphatic system in the pelvic region.

That tubal tuberculosis is elective seems well established by an analysis of 1200 autopsies by Worthen, (2) in which 20 per cent. showed tubal deposits, involving in every case the peritoneum

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1 De Forrest Willard: *Annals of Surgery*.

2 *Med. News*, Nov. 18, 1898.

\*Read before the Nebraska State Medical Society, Lincoln, May, 1899.



and in the majority of cases the tubal mucosa. This relatively large proportion of tubal disease includes primary deposits only, without general peritoneal or other tubercular expressions.

Studying the disease, therefore, as a pelvic manifestation, we find its occurrence bearing a direct relation to the circulatory changes and the lymphatic engorgements which occur with greatest frequency during the functional activity of the genital system. In either case the tubercle bacilli may primarily enter the lymphatic space, or they may gain entrance through a soil previously exposed by protracted multiple bacterial infection. The types of this disease are usually well defined, and may be said to occur in three forms.

The acute miliary form generally involves the entire peritoneum and presents the well marked train of an acute systematic disease, with early ascitic accumulations, attended by fever, emaciation, and as a rule the general expression of a well-defined tubercular disease. The chronic caseous type of inflammation is attended by a local collection of purulent material with extensive adhesions, tissue degeneration, involving the intestinal tract. The chronic fibrous type is a more subacute form, or it may be a late stage of the types mentioned, and is attended by a dense fibroplastic exudate, a small amount of blood-stained fluid in the cavity, and as a clinic evidence, nodular masses may be felt in the pelvis, and as pointed out by Kelly, these enlargements are apt to change their relations with the pelvic organs from time to time.

The prognosis of this disease is good, although some diversity of opinion is entertained by different writers on its ultimate termination. So able and experienced a man as Munde recently said that he had not yet seen, in his own experience, one case go on to complete recovery; yet, he added, other practitioners report successful terminations, and he expects to be able to score greater success in the future.

That this disease subsides without treatment is admitted. The process of involution leaves but slight thickening in the shape of fibroplastic or pigmentary changes as traces of what was once well defined tubercular disease.

*Symptoms.*—Pelvic pain is regarded as a very constant expression of this disease, although the symptomatology takes a very wide range, and a marked developement of this trouble may remain for a long time unrecognized. The increased thickness of the pelvic peritoneum, due to the tubercular inflammatory process, may be looked on as the cause of frequent and painful micturition, which is a fairly constant symptom.

Should this type become chronic and assume the fibrous form, partial fixation of the uterus, with irregular pelvic indurations, will be noted. The local tenderness and the low septic range of temperature will be of value in directing attention to the nature of the trouble, while a curettage may lead to very conclusive evidence, if the bacilli are found in the debris. Local ascitic accumulations in the pelvis, in this disease, may increase in size until there is marked abdominal enlargement, yet the general peritoneum remain uninvolved. In two cases we have met this condition, and in one tubercular masses in the pelvic omentum gave the first opportunity for certain diagnosis.

*Treatment.*—The outcome of these cases has grown to be recognized as more successful, since 1862, when Sir Spencer Wells recorded a recovery after celiotomy. The unmistakable spontaneous recoveries that are met are also an evidence of the favorable response which may be expected under intelligent treatment, and while medicinal and hygienic treatment must be accorded a very useful place in the therapeutic measures employed in the management of this disease, yet exploration of the abdominal cavity has led to convalescence in so large a number of cases, and at the hands of so many observers, that surgical treatment must be looked on as promising.

In the employment of surgical measures, our care must be directed not only toward the removal of extensively deceased organs, but to the release of adhesions, when these adhesions threaten the welfare of the patient, and this is more particularly true in the caseous type, which may usually be regarded as the most serious form of trouble; yet it is true that in the recent miliary invasion, or in a fibroplastic involvement the simple abdominal exploration, with salient irrigation, without drainage, is the ap-



propriate and conservative measure which promises the largest number of recoveries.

The reason for such convalescence may be accounted for by the relief of pressure, the removal of ptomains, and gain in nutrition, with the inhibitory effect on the tubercle bacilli of the phagocytic process thus established. And although Gregg Smith records as his most unexpected recovery a case of operative infection, yet we should take all surgical precautions against the introduction of sepsis.

Representative of the fibrous type of this disease is the case of a multipara, 52 years old, who for several weeks complained of severe pain in the right lower quadrant of the abdomen, in whom a bimanual examination revealed a firm mass fixing the right tube; the temperature ranged between 99 and 101 degrees, micturition was frequent and painful, and marked tympany and constipation were present. Abdominal exploration revealed a dense mass involving the cecum, some coils of the ilium, the right tube had ovary. The peritoneum was much thickened and removal of this extensive pelvic involvement was clearly inadvisable. The abdomen was closed without drainage, and at one and a half years after the operation the patient's condition remains good.

A caseous form of tubercular inflammation with very large cystic accumulation was met in a patient 35 years old, multipara, whose trouble was fairly acute, the symptoms having been in evidence but a few weeks. Pronounced pain, fixation of the pelvic organs, dysuria, constipation, and notable emaciation were the leading symptoms.

Exploration revealed a large tubercular cyst springing from the left tube, with nodules scattered over the pelvic peritoneum and involving the omentum. Removing this cyst and the affected part of the omentum, with irrigation and drainage, was followed by a convalescence in which, one year later, was found a postuterine tenesmus; vaginal tampons of guaiacol and oil led to a disappearance of the enlargement, and to a symptomatic recovery.

A third case was met in a nullipara, aged 31, whose disease had been present for several months, and in whom the symptom of pain was not leading, but disturbed digestion, loss of weight,

partial fixation of the pelvic organs and marked rectal tenesmus were prominent symptoms. A large tubercular cyst was found on exploration, springing from the left side of the pelvis, and surrounding the base of which broken-down glands and purulent material were found. The cyst was removed, the pelvic deposits evacuated, with free irrigation and drainage, followed by convalescence, in which case an unfavorable termination was expected, and this points to similar experiences at the hands of others, which go to prove that a tubercular peritoneum loses, in a large measure, its susceptibility to other forms of bacterial inflammation.

OMAHA.





